



Linux
CPT-201

<http://cpt201.hubner.org/>

Who is root ?

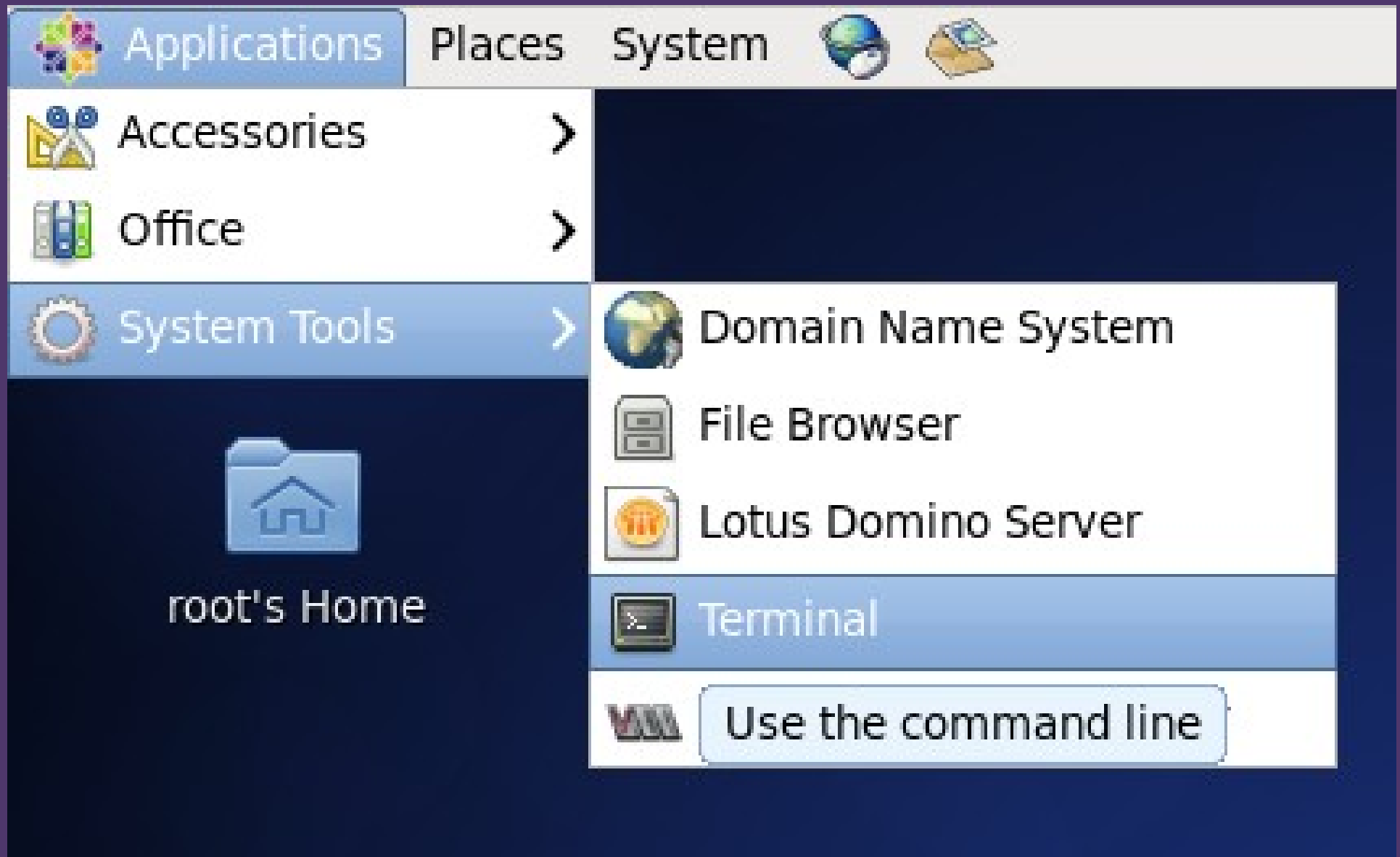
**I DON'T ALWAYS TEST
MY CODE**

**BUT WHEN I DO, I DO IT ON
PRODUCTION SYSTEMS AS THE
ROOT USER**

Linux Shells

- Shells provide a command line interface (CLI) to Linux systems
- If you logon across a network, you are likely configured for a CLI
- If you logon at the host system, you might be configured for a graphical desktop or application (GUI)

Launch Terminal



Entering Commands

- In the most general form:

`command [[-]option(s) [option arg(s)]] [command arg(s)]`

- Spaces are used as separators between options, option arguments, and command arguments, but *may not be needed* between multiple options
- Option order is mostly irrelevant

`"ls -a -l" = "ls -l -a" = "ls -al" = "ls -la"`

1s -a -1

1s -1 -a

1s -a1

1s -1a

Navigating a Command Line

- Control keys can help

CTL+a beginning of line (also home)

CTL+c terminate the current command

CTL+e end of line (also end)

Test the Navigation on a Line

- type the command:

```
# echo "Hello World"
```

- Press the UP arrow
- Press CTL+A
- Press the DELETE key
- Press ENTER

Cutting Down on Typing

- Scroll through your command history with the up (↑) and down (↓) arrows.
 `^r` to search backward in the command history
- Get at your history by typing: **history**
- Complete usernames, host names, commands, and file names with the **tab key**.

Test Tab Completion

- type the command:

`ls /etc/yum`

- press TAB twice (tab tab)

- *See how it lists all files and directories that could complete that name?*

Test Tab Completion

- type the command:

ls ~/Doc

- press TAB

- See how there is only one directory matching Doc*, so it is auto-completed.

Online Help

- UNIX systems offer substantial online help
 - `man`
 - `info`
 - `/usr/share/doc/` (typical)
- Don't forget today's version of “online help” in the way of **Google** and other search engines...

Sections of the UNIX manual

<u>Section</u>	<u>Describes</u>
1	UNIX commands
2	System calls
3	Language library calls
4	Device and network interfaces
5	File formats
6	Games and demonstrations
7	Environments, tables, and troff macros
8	System maintenance commands

Try out the manpages ...

- **man passwd** - for the passwd command.
- **man 5 passwd** - for the passwd file
- **man pwd** - for the command to print the current directory.
- **man -k passwd** - shows a list of commands which have passwd as a keyword (apropos).

Files and Directories

- The top most directory is called the “root” (or root directory) and is displayed as “/”
- Other directories are mounted beneath root.
 - /bin, /etc, /home, /root
 - and others...
- Don't confuse “/” (the root directory) with “/root” (the root user's directory).

Files and Directories

- Each user has a personal directory known as a home directory, which is displayed as “`~`”
- At any given time, you are in a directory. This is known as your **present working directory** (**pwd**) or **current working directory** (**cwd**) and is represented as “`.`”
- Every directory has a **parent directory**, known as “`..`”

Files and Directories

- Each user has a personal directory known as a home directory, which is displayed as “`~`”
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Files and Directories

- FiLe NaMeS aRe CaSe SeNsItIvE
- Avoid using spaces , /, \, <, |, >, and ! when naming files.
 - You *can* use these characters, but it make things easier if you do not.
- Don't start a file name with a . (pronounced “dot”) unless you really mean to.

Test CaSe SeNsItIvItY

echo “Hi” > Hi

echo “hi” > hi

echo “hl” > hl

ls {h,H}*

“Combining” Commands

- Each command is designed to do one or a few things well. “Combine” commands with the pipe character “|”.
- To pipe is to process the output of one command with another command:
 - `ls -R | less`
 - `du | sort -rn | more`

Umm. It's stuck...

- Kill : Control-C
- End of Input (File) : Control-D
- Background : Control-Z

Test the Control-Keys

- Type the Command:

`yes "press ctl+c to exit"`

- Start the Python interpreter:

`python`

In Python, type the command:

`print("press ctl+d to exit")`

Test the Control-Keys

- Type the Command:

`top`

- Press `CTL+Z`

- Type the Command:

`bg`

- Type the Command:

`fg`

- Press `CTL+Z`

- Type the Command:

`killall -9 top`

- Type the Command:

`bg`

Beginning Commands

- cat
- cd
- clear
- cp
- exit
- less
- locate
- logout
- ls
- man
- mkdir
- mv
- passwd
- pwd
- rm
- rmdir
- users
- w
- whatis
- whereis
- which
- who
- whoami

Install Xubuntu



Fast=Good



Applications

Places

System



Accessories



Office



System Tools



root's Home



Domain Name System



File Browser



Lotus Domino Server



Terminal



Virtual Machine Manager

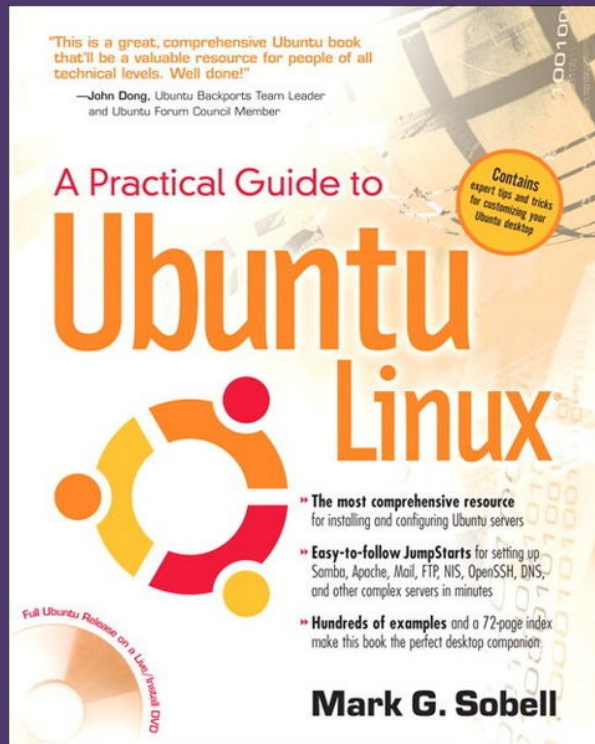


Manage virtual machines

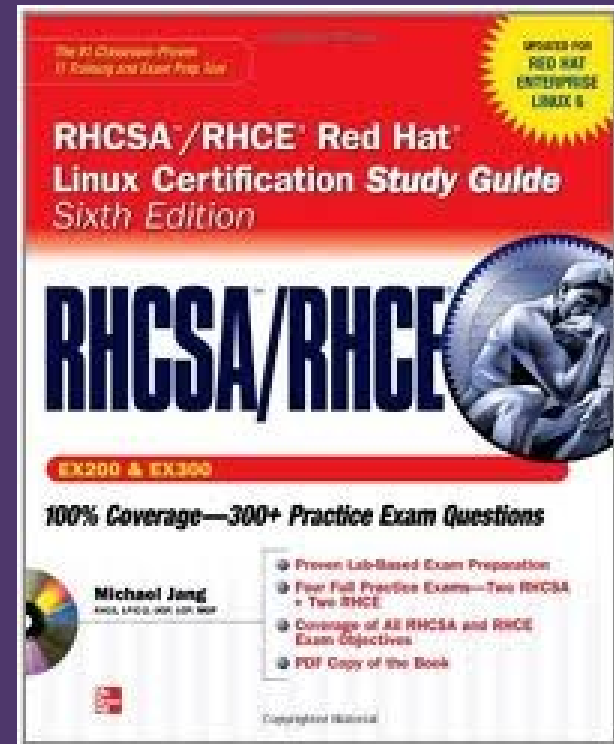
Tests

- Week 6 - Oct 03 - Test 1 - GNU/Linux, Licensing, RedHat, CentOS, Canonical, Ubuntu, Linus Torvaldes, Richard Stallman, Mark Shuttleworth
- Week 9 - Oct 29 - Test 2 - Linux Commandline
- Week 12 - Nov 14 - Test 3 - System Admin
- Week 15/16 - Dec 5/12 - Final

Homework



/or/



Chapter 5
The Linux Utilities

Chapter 3
*Fundamental
Commandline
Skills*